



# Aquaease™ E

Aquaease E is a general purpose, alkaline cleaner formulated especially for cleaning copper, brass, and bronze. Aquaease E can also be used in cleaning ferrous metals and lead alloys.

## Features & Benefits

May be used as a soak, electrolytic or steam cleaner.	Free rinsing, even in hard water. Will not precipitate to form fatty acid films when acid dipped.
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## Physical Data

Solubility in water	Appreciable
Appearance and odor	White to brownish – granular

## Operating Conditions

For electrolytic cleaning, use 4 to 8 oz/Gal at 160°F to 180°F. Use 20 to 40 amperes/sq. ft., 4 to 6 volts, either anodic (reverse) current for up to 30 seconds, or cathodic (direct) current 1 to 2 minutes. When using cathodic current, complete cycle by making work anodic for 10 to 30 seconds.

The higher current densities are used on ferrous metals. When working up a fresh bath, clean cathodes (panel or tank) thoroughly. A slime build-up will interfere with electrolytic cleaning efficiency.

For soak cleaning, use 4 to 12 oz/Gal at 140°F to 190°F.

For steam cleaning, use concentrations of 1/2 to 3 oz/Gal.

## Titration Method

1. Pipette 10 mL of the cleaning solution into a 250 mL Erlenmeyer flask.
2. Add 25 mL of water and 4 drops of Methyl Orange indicator.
3. Titrate with 0.5 N Hydrochloric Acid until the color changes from yellow to orange pink.
4. Record mL used.

Calculation



$$\text{Concentration (oz/Gal)} = \text{mL } 0.5 \text{ N HCl} \times 0.46$$

## Test Kit Method

1. Fill bottles 1/3 full of water. Add 1 mL of Aquaease E.
2. Add 4 to 8 drops Phenolphthalein indicator.
3. Add 0.72 N Hydrochloric Acid dropwise while mixing until the solution turns from pink to a colorless endpoint.
4. Record number of drops used.

Calculation

$$\text{Factor (oz/Gal)} \quad 0.4$$

$$\text{Factor (g/L)} \quad 3.0$$

$$\text{Concentration} = \# \text{ Drops } 0.72 \text{ N HCl} \times \text{Factor}$$

## Waste Disposal

Discharge to a disposal system. To be completely informed on the latest regulations for your area, please contact the local authorities.

## Caution

Aquaease E is an alkaline material and should be handled accordingly. Avoid skin and eye contact. Wear protective clothing, gloves, and goggles. Flush exposed areas immediately with clean, cold water. In case of injury, contact a doctor immediately.



**WARRANTY:** THE QUALITY OF THIS PRODUCT IS GUARANTEED ON SHIPMENT FROM OUR PLANT. IF THE USE RECOMMENDATIONS ARE FOLLOWED, DESIRED RESULTS WILL BE OBTAINED. SINCE THE USE OF OUR PRODUCTS IS BEYOND OUR CONTROL, NO GUARANTEE EXPRESSED OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, OR THE RESULTS TO BE OBTAINED.

## Our People. Your Problem Solvers.

For more information on this process,  
please call us at 203.756.5521 or email: [techservice@hubbardhall.com](mailto:techservice@hubbardhall.com)

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